

Salmonellosis Prevention

The best way to avoid *Salmonella* infections is to make sure that everything is thoroughly cooked. Here are additional ways to prevent salmonellosis:

- 1 Wash hands and surfaces often.** Always wash after touching meat or animals, going to the bathroom, or changing a diaper.
- 2 Wash hands, cutting boards, dishes and utensils with hot, soapy water before handling food and after handling raw meats.**
- 3 Separate raw meat, poultry and seafood from other foods in your refrigerator.** Their juices can contaminate your other foods with bacteria.
- 4 Rinse (and scrub, if possible) all fruits and vegetables in running water.**
- 5 Wash and chill melons before slicing.** Choose melons that have damage-free rinds. Keep melon slices refrigerated.
- 6 Keep all meats and eggs 45°F or colder.** Defrost meat in the refrigerator or *cold* water.
- 7 Refrigerate leftovers promptly.** Reheat all leftovers to 165°F or hotter.
- 8 Do not eat raw vegetable sprouts (such as alfalfa or broccoli sprouts).**
- 9 Use pasteurized milk and egg products.** Do not eat raw milk or undercooked eggs.
- 10 Cook all meat products to the proper temperature.**
165°F--Poultry and Casseroles
155°F--Hamburger and Sausage
150°F--Pork
140°F--Fish, shellfish, lamb, intact beef (not ground beef), and hot dogs.

Selected Unusual *Salmonella* Outbreaks

Pasteurized milk. In 1985, pasteurized milk was implicated in one of the largest U.S. outbreaks of salmonellosis. 16,000 confirmed cases of infection were linked to pasteurized milk that had accidentally been contaminated with raw milk in a Chicago dairy.

Cereal. The first U.S. *Salmonella* outbreak associated with a commercially-boxed cereal occurred in 1998. Over 200 cases were reported from at least 11 states. *Salmonella* was also found in samples from unopened boxes of the cereal; the cereal was voluntarily recalled.

Cantaloupe. Salmonellosis has been linked to melons since at least 1990 when cantaloupe caused 245 illnesses in 30 states. Grown on the ground, melons may be contaminated on their surface with dirt, animal waste, or bacteria, including *Salmonella*. Cutting an unwashed melon through a dirty rind may contaminate the edible part. Excessive time (over 4 hours) at room temperature may then permit bacterial growth that can lead to illness. Many of these outbreaks implicated melons in salad bars and fruit salads—always make sure sliced melons have been kept cold before you eat them.

For more information:

Benton-Franklin Health District

800 W. Canal Dr.
Kennewick, WA 99336 (509) 582-7761

www.bfhd.wa.gov

Check our other brochures:

Egg Safety 101

Facts About Foodborne Illness

Turkey Safety

Pet/Reptile-Associated Salmonellosis

Websites:

Food & Drug Administration Bad Bug Book
www.cfsan.fda.gov/~mow/intro.html

Centers for Disease Control-*Salmonella* Information
www.cdc.gov/ncidod/diseases/submenus/sub_salmonella.htm

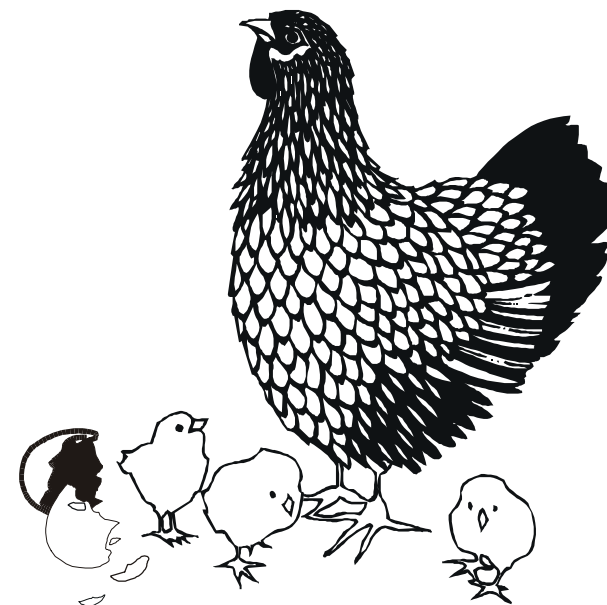
Phone numbers:

WSU Cooperative Extension
(509) 735-3551
USDA Meat and Poultry Hotline
(800) 535-4555

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Salmonella

food safety series



www.bfhd.wa.gov



Salmonella

Salmonella (a group of over 2400 different bacteria with similar characteristics) is commonly found in the intestinal tracts and waste of animals. The bacteria are also widespread in the environment, and can be found in water, soil, insects, animal feed, and on surfaces. Although the bacteria can be found in salmon, they are not named for the fish; they are actually named after the veterinarian that discovered them in 1885, Daniel Salmon.

Occasionally, the bacteria can cause human illness. It is estimated that between 2-4 million Americans have *Salmonella* infections each year. Two of the most common that cause foodborne illness are *Salmonella* Enteritidis (usually associated with poultry and eggs) and *Salmonella* Typhimurium (infections are usually caused by poultry, cattle, meats or meat products, and unpasteurized milk).

In addition to getting salmonellosis (*Salmonella* infection) from food, people may also become infected by handling pets (especially reptiles), animal feed or cleaning animal cages. [Also see our pet-associated salmonellosis brochure.]

Who was Typhoid Mary?

Mary Mallon was an immigrant to the United States. In 1906, she was a cook and, unfortunately, a typhoid carrier. Typhoid fever (a severe illness that can cause nausea, vomiting, fever and death) is caused by *Salmonella* Typhi and is spread by the feces of infected people.

Mary Mallon unknowingly caused several typhoid outbreaks, leading to many illnesses and deaths. To help keep her from spreading the illness, she was quarantined for the majority of her life in a New York hospital. (Typhoid carriers are now generally prohibited from working in food service in the U.S.)

Today, about 400 Americans get typhoid fever each year—about 70% of these cases are caused while traveling out of the U.S. Typhoid fever is more common in areas of the world where handwashing is less frequent and water is more likely to be contaminated with sewage.

Symptoms

The symptoms and severity of salmonellosis will range depending on the strain of *Salmonella*, the health and age of the person infected, and the number of bacteria ingested. Many people that are infected will not show symptoms.

People that are most at risk for illness or severe symptoms are:

Elderly

Infants

Chronically ill with other illnesses

Salmonellosis symptoms include:

- 🤢 Nausea, loss of appetite
- 🤢 Severe stomach pain
- 🤢 Headache, chills and fever (up to 105°F)
- 🤢 Severe, persistent diarrhea (sometimes bloody)

When present, symptoms usually begin 6-48 hours after infection and usually last from 2-7 days. People with symptoms should contact their doctor. A laboratory test is the only way to determine if the person has salmonellosis.

Salmonella Typhimurium DT 104

Most cases of salmonellosis are self-limiting (go away on their own) and the rest are usually treatable with antibiotics. *Salmonella* Typhimurium DT 104, however, has recently been identified as resistant to many commonly-used antibiotics. (When properly diagnosed, it is still usually treatable with certain antibiotics.)

Antibiotic-resistance reinforces the importance of infection prevention through proper food safety, sanitation and animal husbandry practices.

Salmonella Enteritidis and Eggs

Years ago, egg-associated salmonellosis cases were usually caused by eggs that had been contaminated with animal waste. In the 1970's, however, stringent procedures for inspecting, cleaning and disinfecting eggs reduced the number of salmonellosis cases caused by this external fecal contamination of eggshells.

Today, most egg-associated salmonellosis cases are caused by *Salmonella* Enteritidis inside the egg. Even a healthy-looking hen can be infected and can contaminate the egg in her body *before* the shell is formed. To confuse the issue even more, infected hens can lay many normal eggs before occasionally laying a contaminated egg.

It has been estimated that 1 in 20,000 eggs is contaminated with *Salmonella*. (Contaminated eggs will look, smell and taste the same as regular eggs.) **To reduce your risk of infection:**

Keep eggs refrigerated. As the number of bacteria in the egg increases, so does the chance of illness. Refrigeration keeps most bacteria from growing.

Cook eggs until the white and yolk are firm. Cooking reduces the number of bacteria in the egg. Use cooked-base recipes or pasteurized eggs for traditionally-undercooked egg products like egg nog, Hollandaise sauce, and eggs served sunny-side up. Do not eat undercooked or raw eggs (including batters and doughs).

Do not pool eggs. Pooling (combining multiple eggs in one bowl) will cause one egg to contaminate the whole lot. Individually prepare eggs, or use pasteurized egg products, if possible.

[This recommendation is particularly important for people that serve large (or at-risk) groups, like restaurants, hospitals and nursing homes.]

Note: This brochure uses the new taxonomy (naming system) for *Salmonella*. Previously, the *Salmonella* serovars/strains were treated as though each was a species and named with the classic "Genus species" binary system, for example: *Salmonella typhimurium*. According to the new system, *S.typhimurium* should be listed as *Salmonella enterica* serovar Typhimurium or *Salmonella* Typhimurium.